

WHAT IS CLAIMED IS:

- 1 1. A method for applying material in the manufacture of a battery, comprising
2 applying the material in the form of a spray generated from a vibratory
3 nebulizer.
- 1 2. The method of claim 1 wherein the material is an electrolyte.
- 1 3. The method of claim 2 comprising
2 providing a separator, and
3 applying the electrolyte to the separator.
- 1 4. The method of claim 3 comprising
2 providing the separator in a battery can prior to said applying.
- 1 5. The method of claim 4 comprising
2 applying the electrolyte such that substantial pooling of the electrolyte in the
3 bottom of the can is avoided.
- 1 6. The method of claim 1 wherein the material is a film-forming material suitable as a
2 separator.
- 1 7. The method of claim 6 comprising
2 providing a cathode, and
3 applying the film-forming material to at least a portion of the cathode.
- 1 8. The method of claim 7 comprising
2 providing the cathode in a can prior to applying said film-forming material.
- 1 9. The method of claim 8 comprising forming a film from said material by application
2 of a second component, said second component being applied as a spray.

1 10. The method of claim 9 wherein the second component is applied sequentially with the
2 film-forming material.

1 11. The method of claim 9 wherein the second component is applied simultaneously with
2 the film-forming material.

1 12. The method of claim 6 wherein the film-forming material is PVA.

1 13. The method of claim 12 wherein film formation of facilitated by application of
2 electrolyte.

1 14. The method of claim 13 wherein the PVA and electrolyte are applied sequentially.

1 15. The method of claim 13 wherein the PVA and electrolyte are applied simultaneously.

1 16. A method for applying electrolyte in the manufacture of a battery, comprising
2 applying the electrolyte in the form of a spray.

1 17. The method of claim 16 wherein the average droplet size is about 5 micron to about
2 30 micron.

1 18. The method of claim 17 wherein the spray velocity is about 3 to about 5 inch/sec.

1 19. The method of claim 16 comprising
2 providing a separator, and
3 applying the electrolyte to the separator.

1 20. The method of claim 19 comprising
2 providing the separator in a battery can prior to said applying.

- 1 21. The method of claim 20 comprising
2 applying the electrolyte such that substantial pooling of the electrolyte in the
3 bottom of the can is avoided.
- 1 22. The method of any one of claims 16 to 21 wherein said spray is formed by a vibratory
2 nebulizer.
- 1 23. A method for applying a separator in the manufacture of a battery, comprising
2 applying a film-forming system capable of forming a film, said system
3 including a first component and a second component, and applying said first
4 component and second component simultaneously as a spray.
- 1 24. The method of claim 23 wherein the droplet size is about 5 micron to about 30
2 micron.
- 1 25. The method of claim 23 wherein the spray velocity is about 3 to about 5 inch/sec.
- 1 26. The method of claim 23 comprising
2 providing the cathode in a can prior to applying said film-forming system.
- 1 27. The method of claim 26 wherein the film-forming system includes PVA.
- 1 28. The method of claim 27 wherein film-forming system includes electrolyte.
- 1 29. The method of claim 28 wherein the system is a premixed solution of about 10% to
2 about 15% PVA in KOH electrolyte.
- 1 30. The method of any one of claims 23 to 29 wherein said spray is formed by a vibratory
2 nebulizer.

- 1 31. A method for applying material in the manufacture of a battery, comprising
2 selecting a material to be applied, and
3 applying the material in the form of a spray having an average droplet size of
4 about 1 micron to about 75 micron.
- 1 32. The method of claim 31 wherein the droplet size is about 5 micron to about 30
2 micron.
- 1 33. The method of claim 31 wherein the spray velocity is about 10 inch/sec. or less.
- 1 34. The method of claim 31 wherein the spray velocity is about 3 to about 5 inch/sec.
- 1 35. The method of claim 31 wherein the material is an electrolyte.
- 1 36. The method of claim 35 comprising
2 providing a separator, and
3 applying the electrolyte to at least a portion of the separator.
- 1 37. The method of claim 36 comprising
2 providing the separator in a battery can prior to said applying.
- 1 38. The method of claim 37 comprising
2 applying the electrolyte such that substantial pooling of the electrolyte
3 in the bottom of the can is avoided
- 1 39. The method of any one of claims 31 to 38 wherein said spray is formed by a vibratory
2 nebulizer.
- 1 40. The method of claim 31 wherein the material is a film-forming material suitable as a
2 separator.

- 1 41. The method of claim 40 comprising
2 providing a cathode, and
3 applying the film-forming material to at least a portion of the cathode.
- 1 42. The method of claim 41 comprising
2 providing the cathode in a can prior to applying said film-forming material.
- 1 43. The method of claim 40 comprising facilitating film-forming by application of a
2 second component, said second component being applied as a spray.
- 1 44. The method of claim 43 wherein the second component is applied sequentially with
2 the film-forming material.
- 1 45. The method of claim 43 wherein the second material is applied simultaneously with
2 the film-forming material.
- 1 46. The method of claim 40 wherein the film-forming material is PVA.
- 1 47. The method of claim 46 wherein the film-forming is facilitated by application of
2 electrolyte.
- 1 48. The method of claim 47 wherein the PVA and electrolyte are applied sequentially.
- 1 49. The method of claim 47 wherein the PVA and electrolyte are applied simultaneously.
- 1 50. The method of any one of claims 42-49 wherein said spray is formed by a vibratory
2 nebulizer.